PECAN PLANTER'S PRACTICAL POINTERS

NINTH EDITION

BROKEN "SUCCESS" NATURAL SIZE

BECHTEL
PECAN NURSERIES

THEO. BECHTEL. PROPRIETOR

OCEAN SPRINGS :: :: MISSISSIPPI

NOTE

In the following pages we have endeavored to condense all the information necessary to successful Pecan culture. The number of questions asked by prospective planters is an indication that they are seeking the knowledge which we have obtained through over twenty-five years' experience in orcharding as well as propagating, packing and shipping trees. This knowledge we are glad to place at the service of our customers. The mistake usually made by amateurs may be wholly avoided if the following notes are carefully studied. In the preparation of this ninth edition we have made a few changes and some additions to the eighth. The propagation of trees is not outlined in these pages, as that comes under the head of nursery work, while these instructions are especially intended for the orchardist. As a rule the orchardist is neither prepared nor has time or inclination to wait until he can propagate the trees for his own use, therefore, does better to secure good healthy stock grown by some nursery of established reputation.

YOUNG TREES FROM BEARING ORCHARDS

We propagate from our own heavy bearing orchards which we believe to be the most profitable commercial pecan orchards in existance. This feature is of recognized importance, and we attach considerable significance to the fact that our orchards are bearing annually large commercial crops.

SELECTION OF LAND

As this is one of the most important items, we mention it first. The Pecan, like the hickory, thrives on a great variety of soils, but seems to do best where the sub-soil is moderately porous and is mixed with some sand or gravel. Good drainage, either natural or artificial, is absolutely essential; though after trees are well established, a temporary overflow, even of several weeks' duration, will do no harm. River and creek-bottom lands give splendid results, but do not produce nuts so early as the uplands. Nearly all of the cut-over pine lands of the South will produce very profitable, early-bearing Pecan orchards, if well fertilized and naturally well drained. Good loam soil is desirable.

CLIMATE

Just how far north choice varieties of Pecans are hardy has not yet been proven; though experiments are being made as far north as Illinois. There is no doubt that they will succeed anywhere south of the Mason and Dixon line, where land is suitable and temperature does not go much below zero.

SELECTING VARIETIES

Choose good-sized, soft-shelled, well-filled nuts, with a rich kernel, and do not forget that productiveness should be a leading feature. There are many good nuts, but when planting an orchard as long-lived as the Pecan, too much care cannot be exercised in the selection of varieties. The mere fact that a nurseryman has grafted stock is no guarantee of quality, as wood of the best varieties, either for budding or grafting, remains high-priced; therefore, thousands of trees are grafted to comparatively inferior varieties by unscrupulous propagators and sold at "cut-rate" to the inexperienced planter.

SIZE OF TREES TO PLANT

While small sized Pecan trees will eventually give as good results as large ones, there is a saving of time by planting trees from 5 to 6 feet in height, and up to 10 to 12 feet, if obtainable. Very large trees receive a greater check in transplanting, but, when once established bear much earlier and well repay the original higher price. For shipping long distances, the medium size should be used.

TIME TO PLANT

Whenever trees are dormant and ground is not frozen; the best time being as soon as possible after the leaves drop, which is usually about December 1st, here.

HEELING THE TREES

Upon receipt of trees unpack at once, open bundles and separate the trees sufficiently that they may be heeled in and roots well protected from sun and wind until permanently planted. Select a convenient place near the place the trees are to be planted. Place the trees in a trench leaning toward the south at an angle of about forty-five degrees and cover roots carefully with fine soil that will sift in among the roots, and bank well up on the stems. They will then be safe until planted even though they should remain there for several weeks, if this is done so no air and wind can dry the roots.

DIRECTIONS FOR PLANTING

Make holes six inches deeper and wider than may be necessary to accommodate roots, spread out in natural position, being careful to cut off with a sharp knife, all those broken or mashed. Plant trees the same depth they stood in the nursery, filling in among the roots with mellow thoughly pulverized surface soil, with which, if too poor, some well-rotted barn-yard manure should be incorporated. Settle the soil very firmly with a smooth ram-pole (being careful not to injure the roots), unless very wet; in which case use water to settle the soil into all the crevices. Leave two inches of loose soil on the surface and fill 4 or 5 inches high around the stem to allow for settling. Fine ground bone is one of the safest commercial fertilizers to mix with the soil for planting, 2 to 4 pounds according to size of the tree and more if land is very poor. Very strong and unrotted fertilizer must not come in contact with roots. Shrimp or fish scrap fertilizers may be used below and beyond the ends of roots with wonderful results.

FERTILIZING

Soil not naturally fertile should be made so with sufficient manure or some commercial fertilizer, to produce a good crop of corn or cotton while orchard is young. When trees arrive at bearing age, more phospate should be applied if soil shows deficiency. The Pecan is a gross feeder and needs plenty of fertilizer.

Plant cowpeas or velvet beans in all young orchards not used for some cultivated crop, but keep the vines off the trees.. Lespedeza or begger weed is a splendid crop for summer, with white clover; Huban or Melilotus Indica (all of which are self seeding when once established) for winter, all to be worked into the soil, preferably with the disk harrow. Plenty of phosphate produces well-filled nuts. Keep fertilizer a foot away from the trunk of tree for every inch of its diameter and spread out fully twice as far as branches reach, as the roots reach nearly 3 times as far. Amount to be used may be determined by squaring the diameter of the tree in inches at the base and use this result in lbs., of fertilizer, (analyzing not less then 10 per cent posphate and 4 per cent ammonia) as a minimum.

CULTIVATION

Cultivation for newly planted trees should be shallow and frequent enough to keep surface very finely pulverized once every 10 to 15 days in a dry season, and free from weeds or grass in wet weather. Be careful not to draw the dirt away from the collar of the tree and expose it to the sun. It is best to break the entire ground before or soon after setting trees, and plant in some cultivated crop, such as cotton, corn, potatoes, melons, peanuts or

other merchantable produce, being careful not to plant anything large within six feet of the trees. Never put in oats or other small grains, excepting as a winter crop, which should not be allowed to mature grain. Where it is cheaper to keep the soil moist and mellow, and the weeds smothered with heavy mulch, than to cultivate continually, apply, as soon as possible after planting, any available litter; but where field mice abound the stem of the tree must be kept clear. Under all circumstances, cultivate until mulch is obtainable, if not on hand at planting time. Intensive trucking is an ideal culture for young Pecan orchards. Bearing orchards should be plowed and fertilized during the winter or early spring preferably. Disturbing the roots by deep summer plowing is disastrous. Unless soil is very rich it will pay best to begin to build up the soil with summer and winter legumes as soon as trees are planted and work all into the surface of the soil. A heavy cover crop of legumes in summer is very important and beneficial.

DISTANCE

Distance to plant should be from 40 to 70 feet, according to character of soil, the former applying to the poorer and sandy piney woods lands, on which Pecan trees begin bearing quite young; the latter to alluvial and bottom-lands. A very good plan is to plant 35x66 feet and cut out alternate trees as soon as they begin to touch. First cut off the side branches from the trees to be removed later, thus allowing the alternate trees to spread to such an extent that their bearing capacity will increase in proportion as they occupy the space allowed them. In this way the crop will not be materially diminished the year the cutting out is done. The advantages of this method are, protection the trees afford each other and the greater production for the first fifteen or twenty years, as the trees should have produced at least 1,000 pounds of nuts each by that time. This last plan is the one we are using.

PRUNING

When transplanting large Pecan trees, at least three-fourths of the top should be cut away, and of smaller trees about one-third. A six-foot tree should be cut down to about four feet. It is also of the greatest importance that the young shoots which grow on the stem after planting in the orchard be allowed to remain for a few seasons, or until the tree gets stocky and well established, pinching back during the summer so that no large branches grow below where the head is wanted. A common mistake is to keep all the sprouts off the stem, thus making the young tree become spindling, top-heavy and bent over, or perhaps hide-bound and stunted, requiring a support to keep it upright until it recovers from the unnatural method of pruning. Nature never prunes a limb off the stem of a young Pecan tree until well-shaded. Subsequent pruning is seldom necessary except to shape the tree correctly. Leaving all branches on the trunk while trees are under 5 to 6 inches in diameter, breaks the direct rays of the sun, thus lessening the liability to the condition commonly known as "sour sap."

SOUR SAP

A preventive of this trouble, which is usually caused by the sap rising during a warm spell prior to a cold snap, consists in keeping the stem cool by protecting from the sun with any cheap material such as corn stalks, old burlap or better still, a combination of both with the burlap on the outside. To get best results, these points must be remembered and closely followed.

INSECT ENEMIES AND FUNGOUS DISEASES

The statement made by some that the Pecan has no insect foes is a mistake; though the damage to the crop thus far has been so slight that there are

reasons for the casual observer to believe that this tree is exempt. Flat-headed borers attack the trunks of newly planted, or injured trees and kill many if worms are not cut out before the stem is girdled. A very thrifty tree is rarely attacked. Prevent all borers by keeping the bark of the tree covered with common laundry soap or "Borer Eradicator," described on page 8 of this circular. The bud worm has done more or less damage in the nurseries and newly planted orchards by eating the buds and tips of the new growth. Spraying with arsenate of lead often enough to keep the foliage and buds well-coated with the poison is effectual for these and all leaf-eating or chewing insects. May 15th to 30th and again July 15th to August 15th, being the perferred time of spraying well established orchards. Where scab, which seems to be the only troublesome disease of fungous origin, is prevalent, send to the Mississippi State Plant Board for latest bulletin on pecan spraying, Agricultural College, Mississippi.

ROSETTE

This disease or condition, as it might be termed, is recognized in its early stages by the slight crinkling of the young foliage which at the same time has shadings or markings of lighter green on the affected leaves. It indicates that there is something wrong in the soil or condition of soil occupied by the roots. This trouble is best relieved by removing the cause. Where caused by excessive wet soil, perfect the drainage. Where the cause is deficiency of humus in the soil, add large quantities of compost deeply incorporated into the soil. When hardpan or stiff sub-soil is the cause, relief will usually be obtained by breaking up very deeply with dynamite and adding humus in large quantities. Avoid as much as possible the land that is uncongenial to Pecans.

GRAFTING AND BUDDING

To perpetuate and propagate given varieties both methods are used. There is still a division of opinion as to the preferred methods, as root grafting is most successful in some localities while budding and grafting higher up succeeds best in others. The point of union is the only question. Our long experience proves results in the orchards are equal. We are using both methods.

GROWTH OF TREES

Pecan trees well cared for should increase in diameter about 1 inch each year after the first year from transplanting if the larger sized trees are used; smaller ones in proportion after they become established.

TIME OF BEARING

A 5 or 6 foot grafted tree of the prolific varieties, transplanted and given the best of care, will usually bear a few nuts after three years. There are trees in this vicinity that were profitable at five years, and at seven years after planting bore thirty pounds of nuts, while neglected trees here have never become profitable. This is on pine lands, hammock and other uplands—bottom, or any heavy alluvial soils requiring about five years longer. Seedlings have been known to stand twenty-five years or more before bearing.

Profitable crops from the prolific varieties such as "Success" and "Stuart" can usually be counted upon soon after the trees attain size enough to carry such a crop which would be when six to eight inches in diameter. Therefore, it is important to push the growth as much as possible, as size of tree rather than age is of greater importance. Crops thereafter will be in proportion to fertilizer used and care given.

YIELD

When trees have been planted in orchards and given proper care, the following yield per tree may be expected:

6 years, 4 lbs.	12 years, 45 lbs.
7 years, 10 lbs.	13 years, 55 lbs.
8 years, 15 lbs.	14 years, 65 lbs.
9 years, 20 lbs.	15 years, 80 lbs.
10 years, 25 lbs.	20 years, 125 lbs.
11 years, 35 lbs.	25 years, 150 lbs.

NOTE—While the above may be termed an average yield, we have known a tree to yield 30 pounds when planted 7 years and in autumn of 1910 gathered 100 pounds from a tree planted in our garden in 1900. In 1919 it bore a crop of 200 pounds, which brought the average to 115 pounds per year for ten years. In 1923 one of our 18 year old Success trees yielded 273 lbs.

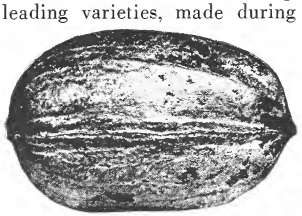
ENGLISH OR PERSIAN WALNUTS

In answer to those inquiring about this nut, we can only say they have not proven a general success in the South, on account of a root disease and shy bearing; although there are individual trees now thriving. Even could this difficulty be overcome, the profit, though large, would not compare with that of the Pecan, which is superior in every way; hence, far more popular on the market.

DESCRIPTION OF LEADING VARIETIES

SUCCESS

This grand nut is probably attracting more attention and being planted more extensively than any of the established varieties. Though not the largest nut in existence, the kernel proved to be the heaviest in a test of fourteen leading varieties, made during a series of years. Ovate in form, with thin shell of splendid craking quality; kernel very plump and heavy; flavor excellent, color bright and form fine. We think it superior to any Pecan we propagate. Originated here in Ocean Springs, first propagated, named and introduced by us. Tree of good sturdy growth, heavy and annual bearer. Select nuts, forty to the pound; and occasionally attain a weight of one-half ounce each; average forty-five. Keeping qualities the best. We class this the greatest commercial variety for the Gulf States, and its now also thriving from California to the Atlantic coast.

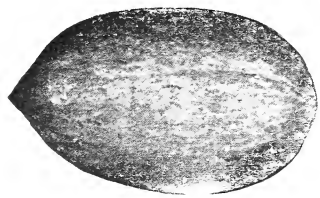


NOTE—In purchasing "Success" trees, we wish to caution the public, that there are at least two other trees in this vicinity that we know of besides the original genuine "Success" that have been propagated under the name of "Success." We are the only nursery firm ever granted the right to cut scions from the original "Success" tree.

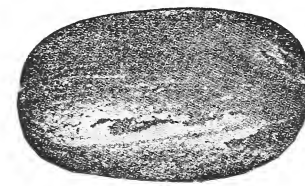
When in the nursery business in Illinois we introduced the 'Bechtel Double Flowering Crab" which took its place at the top of the list as the finest sweet scented hardy flowering tree in the United States. Now, after more than twenty years experience with this variety we feel justified in claiming the same position in nut culture for the Success Pecan. Our own orchard now contains over 100 acres of this variety alone.

STUART

A well-known, reliable sort, ovoid in shape, with slight point at apex; shell easily cracked, kernel good quality and fills the shell completely. Same weight as "Success." Heavy bearer. Origin, Jackson County, Mississippi.



STUART



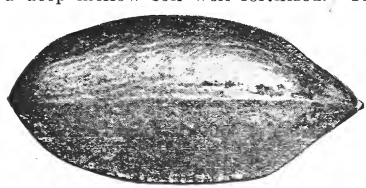
PABST

PABST

Another Jackson County nut, originated in Ocean Springs. Oblong, blunt at both ends. Medium soft shell, kernel plump and quality No. 1. Tree grows to be quite large before it yields abundantly, but eventually bears well, on sandy clay timber soil. Because of excessive scabbing this variety has been discarded by planters. We have developed and propagated a scab free strain which will be welcome news to those in sections where this variety was formerly profitable.

DEPENDABLE

This variety which is the result of a cross of the Success on Jewett by Mr. Chas. E. Forkert, of this place, shows every indication of being a very superior variety. So far it is entirely immune to scab, is very prolific, has superior cracking qualities and a kernel equal in quality to Success. Size same as Success and Stuart under same conditions. Like Success it requires a deep mellow soil well fertilized. Try it where scab is prevalent.



VAN DEMAN

Large, oblong, pointed at apex; shell thin, cracking quality good; kernel full, fine quality and color; not uniformly prolific.

SCHLEY

Origin, Jackson County, Mississippi; Oblong, with small point at apex; medium size; a choice paper-shell; kernel very good. Generally considered to be a shy bearer of very choice nuts, but is gaining in popularity as good care and abundant fertilizing have shown better yields, especially on the heavier soils.

NOTE

It has been deemed advisable to cull out such varieties from our propagating list which do not give general satisfaction, or nearly so. We have retained those from which a selection may be made suitable to the various soils and conditions found in the Southern pecan belt.

We deem it advisable to add from time to time only such varieties as may prove worthy after thorough testing, therefore have added the Dependable.

HOW TO GROW PECANS SUCCESSFULLY

Select land carefully.
Select varieties carefully.
Plant carefully.
Cultivate and fertilize intensively.

The fact that many who plant will not follow closely the details in nut culture will be a guarantee that there will ever be a lucrative business for those who do attend to these details to the letter.

Pecan growing is now an established industry.

The enormous increase in our importations of nuts which has reached the staggering sum of nearly sixty millions of dollars in one year, is evidence that we have a reliable home market to say nothing of the exporting we will be able to do with the "King of Nuts," the Pecan.

PLANTING ORCHARDS ON CONTRACT

We will plant and care for orchards on your land or purchase lands and plant if desired on terms to suit the purchaser.

TOP-GRAFTING

Large or small trees grafted to choice varieties on contract in any quantity. State number and size of trees you have to be grafted, and we will submit estimate on same. We charge according to diameter of tree measured just above the bulge at stump height, at the rate of 50c per inch. No tree grafted for less than $1.00. In addition transportation must be furnished, also board and lodging for grafter and one common laborer for each grafter. We furnish scions from our heavy bearing orchard trees, wax of our own preparation and the wrapping material.

No trees are too large to top graft providing they are still vigorous. Having been pioneers in the top grafting of pecan trees (which method we preferred to top budding as being more certain and bringing much quicker results) we have successfully carried on this work for the past twenty-four years and are now making it a special branch of our business.

Our guarantee and terms on application.

CONSULTING HORTICULTURIST

In this capacity we assist the orchardist in directing his work in establishing new orchards, making older ones profitable, inspecting and estimating values, selecting land for orchards, etc.

MEDAL AND DIPLOMA was awarded us at the World's Fair, St. Louis, Missouri. Premiums were awarded on our pecan displays Gulfport Fair, Jackson County Fair, West Jackson County Fair and A. & M. Horticultural Society, at Agricultural College, Mississippi.

REFERENCES: Cashier Ocean Springs State Bank; Farmers & Merchants State Bank; Ocean Springs; First National Bank of Biloxi; also, Agricultural and Mechanical College of Mississippi.

BORER ERADICATOR

Stir one and one-half pounds sulphur in water to a paste; add this paste and water enough to slake thoroughly to 6 pounds fresh lime allowing the slaking lime to boil the sulphur and cover well to retain the heat for four hours or more. Before using add one quart kerosene to the mixture and agitate thoroughly for five minutes. Borers of every kind may be kept out of all kinds of trees by keeping this wash on all the year. This may be applied with a brush or diluted enough to be applied with a sprayer.